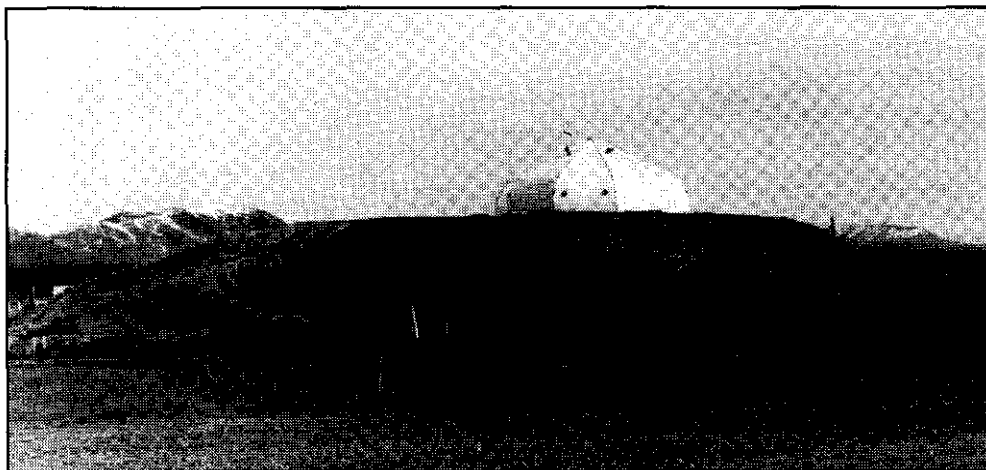




Proposed Plan for Pad A at the Radioactive Waste Management Complex, Idaho National Engineering Laboratory



Pad A at the Radioactive Waste Management Complex.

Introduction

The purpose of this **Proposed Plan** is to summarize information and seek comments on the remedial alternatives proposed for Pad A by the Department of Energy Idaho Operations Office (DOE), Environmental Protection Agency Region 10 (EPA), and the Idaho Department of Health and Welfare (IDHW). Note that hereinafter, the DOE, EPA, and IDHW will be referred to as "the agencies." Pad A is an above ground disposal area for low-level radioactive waste within the Subsurface Disposal Area (SDA) at the Radioactive Waste Management Complex (RWMC). The RWMC is located in the southwestern portion of the Idaho National Engineering Laboratory (INEL). See Figure 1.

DOE, in conjunction with EPA and IDHW, prepared this Proposed Plan in accordance with public participation requirements identified under Section

117(a) of the Comprehensive Environmental Response, Compensation, and Liability Act (**CERCLA**), commonly called Superfund. This plan outlines the results of the remedial investigation

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Public Comment Period
July 28 to August 26, 1993

Open Houses

Pocatello
Wednesday, August 11
INEL Outreach Office
1651 Al Ricken Drive

Twin Falls
Thursday, August 12
INEL Outreach Office
233 2nd St. North,
Suite B

*Agency representatives will be available from **12 noon to 7 p.m.** for discussions and formal public comment.*

Public Meetings

Idaho Falls
Tuesday, August 17
Westbank Inn
475 River Parkway

Boise
Wednesday, August 18
Boise Public Library
715 S. Capitol Blvd.

Moscow
Thursday, August 19
University Inn
1516 Pullman Road

*All public meetings will begin at **6:30 p.m.** with an informal open house where representatives from the agencies will be available to discuss the project. At **7 p.m.** there will be a presentation by the agencies, followed by a question and answer session, and opportunity to make formal public comments. A court reporter will prepare a transcript of the meeting and record oral public comments.*

Proposed Plan - Document requesting public input on a proposed remedial alternative.

CERCLA - (Comprehensive Environmental Response, Compensation, and Liability Act, commonly called Superfund Act, implemented by 40 CFR 300 et seq.) - Law which establishes a program to address sites where hazardous substances have been released into the environment.

Administrative Record - Documents including correspondence, public comments, Record of Decision, and technical reports upon which the agencies base their remedial action selection.

Record of Decision (ROD) - Document which summarizes information about the site, the remedy selection process, and the selected remedy for a cleanup under CERCLA. Contains the Responsiveness Summary.

Responsiveness Summary - The part of the ROD which summarizes and provides responses to comments received during the public comment period.

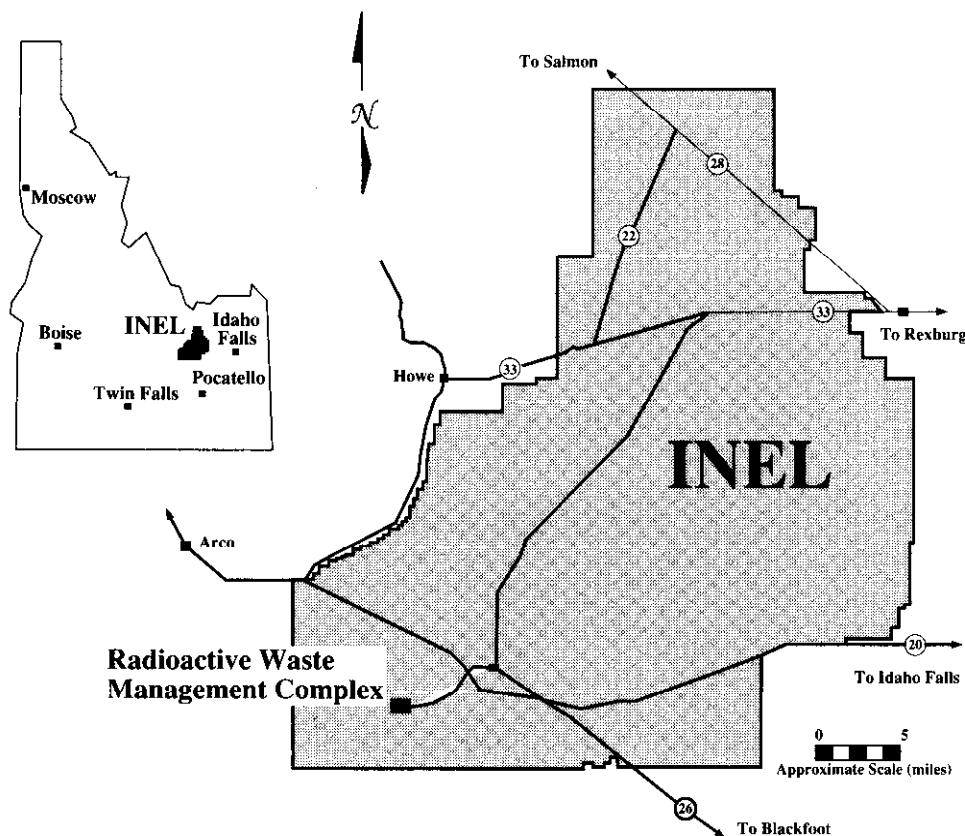


Figure 1. The Radioactive Waste Management Complex at the INEL.

including the potential risk to human health, summarizes the alternatives studied, and discusses the selection of a preferred alternative. The information summarized in this Proposed Plan can be found in greater detail in the report titled *Remedial Investigation/ Feasibility Study for Pad A (Operable Unit 7-12), Radioactive Waste Management Complex, Idaho National Engineering Laboratory* (EGG-WM-9967). This document and other supporting information are available in the **Administrative Record** which may be reviewed at the INEL Information Repositories listed on page 15.

Definitions of technical and administrative terms are noted in ***bold italics***, and explained in the margins.

The recommended remedial action alternative for Pad A is maintenance of the existing cover and monitoring

(hereafter referred to as "***Limited Action***"). Other alternatives considered included Containment and No Action. Limited Action is recommended because it is believed to provide the best balance of trade-offs among the alternatives. This alternative will be designed to be protective of human health and the environment and to comply with applicable federal and state regulations.

The Limited Action alternative focuses on soil cover contouring and slope correction, maintenance, and monitoring of Pad A.

Maintenance includes subsidence and erosion control of the cover. The monitoring program will be designed to ensure the effectiveness of the existing soil cover and to ensure this remedy continues to be protective of human health and the environment.

How You Can participate

We encourage the public to participate in the decision process. You can participate by reading this Proposed Plan and additional documents in the Administrative Record, attending one of the public meetings, and submitting verbal or written comments on the Administrative Record and this Proposed Plan. Comments and transcripts of each meeting will become part of the Administrative Record. Both written and verbal comments will be given equal consideration. Written comments can be submitted until August 26, 1993, to Jerry Lyle, DOE Deputy Assistant Manager of Environmental Restoration and Waste Management, at the address listed on page 15.

Although this Proposed Plan identifies Limited Action as the agencies' preferred remedial alternative, the actual remedial alternative will not be selected until the public comment period has ended and all comments have been reviewed and considered. Therefore, the final remedial action plan, as presented in the *Record of Decision* (ROD), could be different from the preferred alternative depending on comments received during the public comment period.

The public is encouraged to review and comment on all of the alternatives developed and analyzed for Pad A, not just the preferred alternative. The agencies will consider all public comments on this plan in preparing the ROD. The comments will be summarized and responded to in the *Responsiveness Summary* section of the ROD.

Background

The INEL is an 890 square mile DOE facility on the Eastern Snake River Plain in southeastern Idaho. The

Eastern Snake River Plain is a relatively flat, semi-arid sagebrush desert. The plain is bounded on the north and west by the Lost River, Lemhi, and Bitterroot Mountain ranges. The Big Lost and Little Lost Rivers and Birch Creek flow out of these ranges intermittently onto the INEL. These drainages generally flow only in association with wet winters. The Big Lost River is located about 1.5 miles north of the RWMC. Drainages around and within the Eastern Snake River Plain recharge the Snake River Plain Aquifer. The top of the aquifer is about 580 feet below the RWMC. The aquifer occurs in and is overlain by basaltic lava flows with thicknesses up to several thousands of feet. Within the flows are thin layers of sediment called interbeds.

The primary mission of the INEL is nuclear reactor technology development and waste management. In November 1989, the INEL was placed on the *National Priorities List* (NPL), which designates hazardous substance sites requiring investigation. Under CERCLA, the risks posed by hazardous substances at NPL sites must be evaluated and, if necessary, appropriate remediation methods must be selected and implemented to reduce risks.

Scope and Role of Proposed Action

In order to meet cleanup requirements, the agencies signed a *Federal Facility Agreement and Consent Order (FFA/CO)* in December 1991. A *Remedial Investigation/Feasibility Study* (RI/FS) and any required cleanup of specific operable units at the INEL are guided by the FFA/CO and *Action Plan*. These documents, negotiated by the agencies, provide procedures and schedules to ensure investigations are conducted in compliance with federal and state environmental laws.

National Priorities List

(NPL) - A list of sites designated by EPA for investigation and potential cleanup.

Federal Facility Agreement and Consent Order

- The official title of what is referred to as the Interagency Agreement (IAG). It is a binding document required by CERCLA, that is entered into by DOE, EPA, and IDHW. Implements cleanup responsibilities at the INEL.

Remedial Investigation/Feasibility Study (RI/FS) -

Document(s) which identify the nature and extent of contamination and evaluate potential remedial actions.

Action Plan - Document which defines the schedule and procedures for implementing the Federal Facility Agreement and Consent Order (FFA/CO), the agreement between DOE, EPA, and IDHW implementing cleanup responsibilities at the INEL.

Operable Unit - Area, site, or group of sites defined by geographic features, contaminant boundaries, or other features distinguishing the area/sites as a distinct problem.

To better manage investigations of potentially contaminated sites, the INEL has been divided into 10 Waste Area Groups (WAGs) of which the RWMC is designated as WAG 7. Each waste area group contains several waste disposal areas called **operable units**. Pad A has been designated as Operable Unit 12 of WAG 7 and is referred to as Operable Unit 7-12. The entire RWMC will be evaluated in the WAG 7 comprehensive RI/FS, scheduled to begin in 1996.

The RI/FS was conducted for Pad A to: 1) evaluate the short- and long-term risks posed by the Pad A wastes; and 2) develop potential remedial alternatives. The RI Report (Volume I of the RI/FS) presents pertinent analytical data and historical information describing Pad A. Historical records and existing sampling data were summarized to present a comprehensive overview of the monitoring activities and analytical results on and near Pad A since 1974.

Pad A Description

The RWMC consists of two main storage and disposal areas: the

Transuranic (TRU) Storage Area and the Subsurface Disposal Area (SDA). Pad A, located in the north-central portion of the SDA (Figure 2), was constructed in 1972 for disposal of packaged mixed waste (hazardous waste contaminated with radioactive material) primarily from the Rocky Flats Plant in Colorado. The wastes were in solid, not liquid form, packaged in 55-gallon drums and 4 x 4 x 7 feet plywood boxes with polyethylene liners, and were placed at Pad A from September 1972 until August 1978. Dimensions of the pad are 240 x 335 feet with the wastes occupying approximately 40% of the total pad area.

In 1978, closure of Pad A was completed by placing plywood and/or polyethylene over many of the exposed containers. The waste pile was then covered with a 3 foot thick soil layer. After soil placement was completed, the area was seeded with crested wheatgrass to minimize soil erosion.

The composition of the Pad A wastes was identified based on information from the Rocky Flats Plant, the major

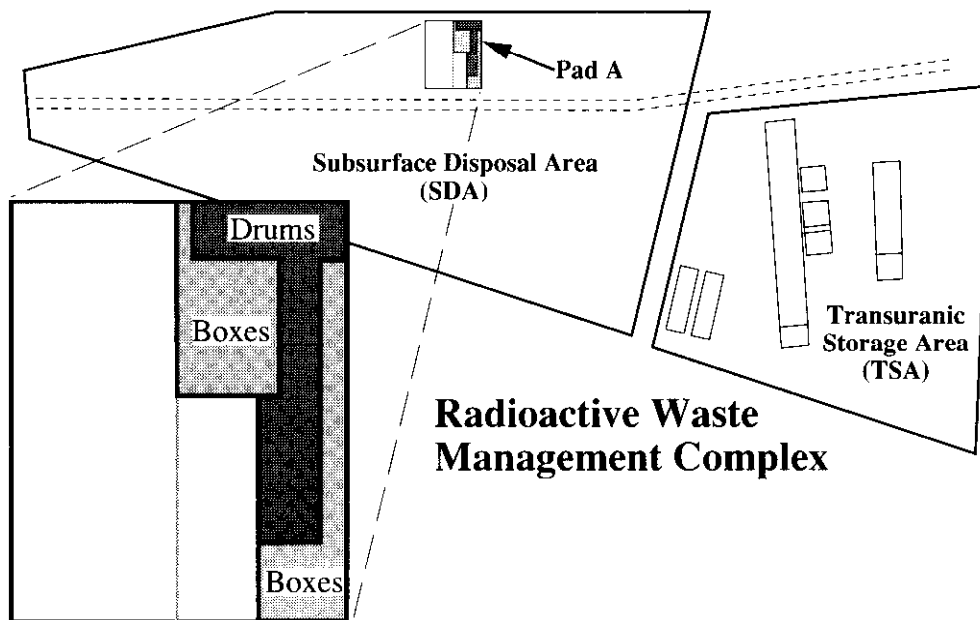


Figure 2. Location of Pad A at the Radioactive Waste Management Complex.

source of Pad A wastes. Wastes, totaling approximately 13,341 yd³ (10,200 m³), at Pad A consist of:

- Approximately 9,483 yd³ (7,250 m³) of evaporator salts, primarily sodium and potassium nitrates, from Rocky Flats contaminated with plutonium, americium, thorium, and potassium-40;
- Approximately 2,943 yd³ (2,250 m³) of waste consisting primarily of oxides of uranium, uranium casting wastes, beryllium foundry wastes, and machining wastes from Rocky Flats;
- Dry sewage sludge from Rocky Flats contaminated with low levels of *transuranic radionuclides*; and
- Miscellaneous INEL-generated radioactive wastes (e.g., lab waste, counting sources, uranium standards).

Summary of Site Risks

A **Baseline Risk Assessment** was conducted to evaluate current and future potential risks to human health and the environment associated with contaminants in the Pad A wastes.

Contaminants identified at Pad A are the following radionuclides and inorganic compounds:

Pad A Contaminants	
Radionuclides	Inorganic Compounds
Potassium	Sodium Nitrate
Thorium	Potassium Nitrate
Uranium	Sodium Chloride
Plutonium	Potassium Chloride
Americium	Sodium Sulfate
	Sodium Hydroxide
	Potassium Hydroxide
	Beryllium
	Beryllium Oxide

Current environmental monitoring of groundwater, surface water, air and soil, has not conclusively shown any contaminant releases attributable to Pad A wastes; therefore, fate and transport modeling of the Pad A wastes was used in the baseline risk assessment to evaluate potential risks. The modeling estimates contaminant movement through soil, air, and water. These estimates provide contaminant concentrations in a given medium at a specific time and allow evaluations of potential risks to human and ecological receptors.

HUMAN HEALTH EVALUATION

In the human health evaluation, both present and future potential exposures to contaminants were evaluated. The human health risk assessment evaluated carcinogenic and noncarcinogenic risks for a period of 1,000 years after the waste was disposed (1972-2971). The 1,000-year period was further divided into the following three current and future use scenarios.

- 1) The current industrial scenario is expected to continue until the year 2015. Under this scenario, potential exposure to workers at the RWMC, and residents adjacent to the INEL, were evaluated.
- 2) Through the year 2090, it is assumed that DOE continues to operate and maintain the RWMC to prevent unrestricted public access to the RWMC. (DOE Order 5820.2A, *Radioactive Waste Management*, requires active institutional control of low-level radioactive waste disposal sites for 100 years following closure.) Institutional controls would be implemented to control the facility and may include, but are not limited to, restricting land use, controlling public access, posting of signs, fencing or other barriers,

Transuranic Radionuclide -

Any radionuclide with an atomic number greater than that of uranium (92). Plutonium is a transuranic radionuclide.

Baseline Risk Assessment -

Assessment required to be conducted under CERCLA to evaluate potential risks to human health and environment. Assessment identifies toxicity of existing and potential human and environmental exposures to contaminants at unit/site/area.

Hazard Index - A numerical value that represents the sum of hazard quotients. When the hazard index exceeds 1, there may be concern for potential non-carcinogenic effects.

etc. Under this scenario, potential exposure to workers at the RWMC, and residents adjacent to the INEL, were evaluated.

- 3) Beyond the year 2090, it was assumed that the INEL was available for unrestricted use. The potential risks from residential development adjacent to the RWMC and Pad A boundaries were evaluated.

The modeling indicated that radionuclides would not reach the aquifer within 1,000 years; therefore, these were not evaluated in the risk assessment.

The evaluation of current and future use scenarios assumes that industrial workers and residents would be located at the locations shown in Table 1. For the residential scenarios, it was assumed that a family would occupy the area and engage in agricultural activities such as irrigation of crops, livestock watering, and domestic activities that would utilize water pumped from the Snake River Plain Aquifer.

The following types of exposure were evaluated in the risk assessment:

- Ingestion of surface soil;
- Inhalation of contaminated dust;
- Ingestion of drinking water (groundwater) from the Snake River Plain Aquifer;
- Ingestion of food crops (residential scenario only); and
- External exposure to radionuclides.

Based on the results of the risk assessment, there is no current risk to workers or the public from Pad A. The only potential risk identified by the risk

characterization of Pad A occurs at the Pad A boundary for residents during a 30-year period beginning in 2228. This risk is based on potential nitrate concentrations in groundwater, which, based on fate and transport modeling, are estimated to peak approximately 250 years in the future.

Due to the conservative nature of the assumptions used in the fate and transport modeling, the actual nitrate concentrations in groundwater are expected to be lower than those predicted.

In addition, the hazard indices calculated for infants and children are based on two additional conservative assumptions: 1) peak sodium nitrate and potassium nitrate concentrations occur in groundwater at the same time, and 2) infants and children are exposed to the sum of these peak concentrations.

These latter two assumptions are conservative in that the groundwater analysis actually predicted different travel times to the groundwater for sodium nitrate and potassium nitrate (i.e., their predicted peak concentrations are not additive). Given these conservative elements, the **hazard index** associated with the groundwater ingestion exposure pathway is expected to be lower than 1.

Although not quantitatively evaluated in the risk assessment, prolonged exposure to Pad A contaminants through intrusion into the waste pile, would likely pose an unacceptable risk to human health.

Table 1. Summary of Risks from Pad A. (Estimated risks are for releases from Pad A only. Cumulative risks for all sources at the RWMC will be evaluated in the RWMC Comprehensive RI/FS.)

Scenario	Carcinogenic Risk ¹	Nitrates as Nitrogen in Groundwater (mg/L) ⁴	Non-Carcinogenic Risk ² (Hazard Index) ³
Current Scenario (thru 2015)			
Pad A Boundary (Industrial Receptor)	8 in 100,000,000 (8×10^{-8})	0	Less than 0.0001 (Ingestion of soil)
RWMC Boundary (Industrial Receptor)	4 in 1,000,000,000,000 (4×10^{-12})	0	Less than 0.0001 (Ingestion of soil)
INEL Boundary (Residential Receptor)	2 in 10,000,000,000,000 (2×10^{-13})	0	Less than 0.0001 (Ingestion of food crops by child)
INEL Control Period (thru year 2090)			
Pad A Boundary (Industrial Receptor)	4 in 10,000,000 (4×10^{-7})	0	Less than 0.0001 (Ingestion of soil)
RWMC Boundary (Industrial Receptor)	4 in 10,000,000,000 (4×10^{-10})	0	Less than 0.0001 (Ingestion of soil)
INEL Boundary (Residential Receptor)	2 in 100,000,000,000 (2×10^{-11})	0	Less than 0.0001 (Ingestion of food crops by child)
Post-Control Period (2090-2971)			
Pad A Boundary (Industrial Receptor)	2 in 100,000 (2×10^{-5})	112*	6 (Ingestion of water by infant)
RWMC Boundary (Industrial Receptor)	2 in 1,000,000 (2×10^{-6})	17*	1 (Ingestion of water by infant)
INEL Boundary (Residential Receptor)	4 in 10,000,000 (4×10^{-7})	3	0.2 (Ingestion of water by infant)

¹ The NCP defines an acceptable level of carcinogenic risk as less than 1 additional incidence of cancer in 10,000 to 1,000,000 individuals (10^{-4} to 10^{-6}).

² A hazard index (the ratio of the level of exposure to an acceptable level) greater than 1 indicates that there may be concern for non-carcinogenic effects.

³ Unless otherwise specified, hazard index refers to total non-carcinogenic risks for all exposure pathways for an adult receptor. The text in parentheses indicates the primary contributing pathway.

⁴ The federal drinking water standard for total nitrates (as nitrogen) in groundwater is 10 mg/L.

* The estimated concentrations were based on conservative groundwater modeling; actual concentrations are expected to be lower than the drinking water standard for nitrates.

Remedial Action

Objectives (RAOs) - Goals set in accordance with EPA guidance for protection of human health and environmental receptors from potential adverse effects of contaminants that could occur in, or be transported by, groundwater, soil, and air.

National Contingency Plan

(NCP, implemented by 40 CFR 300 et seq.) - Regulations implementing response actions under CERCLA, including the procedures for emergency response to releases of hazardous substances.

ARARs (Applicable or Relevant and Appropriate Requirements) - "Applicable" requirements mean those standards, criteria, or limitations promulgated under federal or state law that are required specific to a substance, pollutant, contaminant, action, location, or other circumstance at a CERCLA site. "Relevant and Appropriate" requirements mean those standards, requirements, or limitations that address problems or situations sufficiently similar to those encountered at the CERCLA site such that their use is well suited to that particular site.

ECOLOGICAL RISK ASSESSMENT

Based on the ecological risk assessment in the RI/FS, the Pad A wastes are not considered to have any significant disruptive effects on animal or plant populations or the local ecosystem. The ecological risk assessment is an evaluation of the actual or potential effects that the Pad A wastes could impose on plants and wildlife associated with the RWMC. Radionuclides and chemicals were evaluated to assess their potential effects to ecological receptors. Assuming that burrowing animals do not come in direct contact with Pad A contaminants, and given the effectiveness of the present cover, the nature of the contaminants, the low precipitation, and the lack of vegetation and habitat value within the RWMC for wildlife, adverse effects to resident species are not expected. This information will be incorporated into a WAG-wide or INEL site-wide assessment to determine the potential cumulative impacts to the environment from all areas.

Remedial Action Objectives

As part of the RI/FS process, **remedial action objectives** (RAOs) were developed in accordance with the **National Contingency Plan** (NCP) and EPA guidance for conducting RI/FS investigations. The intent of the objectives is to set goals for protection of human health and the environment from potential adverse effects of Pad A contaminants that could occur in, or be transported by, groundwater, soil, and air.

The results of the investigation indicate that the existing Pad A cover is a protective barrier for the Pad A contents; therefore, the focus of remedial action alternative

development was on maintaining the existing cover integrity through surface water management, erosion control, and prevention of excessive infiltration rates. A long-term monitoring program would be conducted to ensure this alternative continues to be protective of human health and the environment, and provide an early indication of a release of Pad A contaminants to the environment.

Summary of Alternatives

In the Feasibility Study, alternatives were identified that: (1) achieve the stated remedial action objectives; (2) provide overall protection of human health and the environment; (3) meet **ARARs**; and (4) are cost-effective.

The following sections provide summary descriptions of each of the developed alternatives. The primary **ARARs** for all the alternatives are:

- 40 CFR 264 Subpart N, "Landfills" (IDAPA §16.01.05008).

The relevant and appropriate requirements of this regulation are used when residual contamination poses a direct contact threat, but does not pose a groundwater threat. These requirements address:

- Covers, which may be permeable, are used to address the direct contact threat;
- Limited long-term management includes site and cover maintenance and groundwater monitoring; and
- Institutional controls are used as necessary to prevent direct contact with waste.

No Action Alternative

Under this alternative, no action other

than groundwater, air, and soil monitoring would be implemented. Monitoring costs for the next 30 years are estimated at \$692,000.

Alternative 1: Containment of Pad A Materials

Two subalternatives were developed and evaluated in the detailed analysis. One subalternative involves construction of a composite earthen material cover to be placed directly over the existing Pad A cover. Several combinations of different earthen material types were evaluated within this alternative using layers of clay, soil, rock, and/or sand. It is estimated that a composite earthen cover would require 10 to 15 workers approximately 60 weeks to complete construction. Construction and 30 years of monitoring costs are estimated to range from \$1.8 million to \$2.3 million.

The other subalternative evaluated would involve construction of an earthen/synthetic material cover over the existing waste pile using clay, gravel, and a plastic flexible membrane liner. It is estimated that an earthen/synthetic cover would require 10 to 15 workers 60 weeks to complete construction. Construction and 30 years of monitoring costs are estimated at \$2.4 million.

Alternative 2: Limited Action

Under Alternative 2, actions would focus on maintenance and upkeep of the existing soil cover. Maintenance would include subsidence correction and erosion control of the Pad A cover. Monitoring could include sampling of water, air, and soils at Pad A to ensure the effectiveness of the existing cover and the protection of groundwater. Under Limited Action, the agencies will continue to review the action within two years and every five years thereafter to ensure that human health

and the environment are being protected. The overall cost for maintenance and 30 years of monitoring is estimated at \$1.7 million.

Evaluation of Alternatives

Each of the alternatives subjected to detailed analysis were evaluated against eight of the nine evaluation criteria identified under CERCLA (see Table 2). The ninth criterion, community acceptance, will be evaluated when public response to the proposed remedial action for Pad A is received. All criteria must meet the threshold criteria.

Evaluations against the primary balancing criteria, which are used to weigh major tradeoffs among alternatives, are summarized in Table 3.

Overall Protection of Human Health and the Environment

Each of the alternatives satisfies the criterion of overall protection of human health and the environment. The alternatives provide protection by minimizing the risk of potential contaminant migration to the Snake River Plain Aquifer and by maintaining the inaccessibility of the Pad A waste materials.

Compliance With Applicable or Relevant and Appropriate Requirements (ARARs)

ARARs are discussed for each alternative considered at the Pad A unit under the Summary of Alternatives. The alternatives meet the identified ARARs for this unit with the exception that the No Action alternative does not include institutional controls past the year 2090.

Table 2. Evaluation criteria.

The nine evaluation criteria used in evaluating the alternatives are summarized below.

Threshold Criteria

- **Overall protection of human health and the environment** addresses whether a remedy provides adequate protection of human health and the environment and describes how risks posed through each exposure pathway are eliminated, reduced, or controlled through treatment, engineering controls, or institutional controls.
- **Compliance with applicable or relevant and appropriate requirements (ARARs)** addresses whether a remedy will meet all of the ARARs of other federal and state environmental laws and/or justifies a waiver.

Balancing Criteria

- **Long-term effectiveness and permanence** refers to expected residual risk and the ability of a remedy to maintain reliable protection of human health and the environment over time, once clean-up goals have been met.
- **Reduction of toxicity, mobility, or volume through treatment** is the anticipated performance of the treatment technologies a remedy may employ.
- **Short-term effectiveness** addresses the period of time needed to achieve protection and any adverse impacts on human health and the environment that may be posed during the construction and implementation period, until clean-up goals are achieved.
- **Implementability** is the technical and administrative feasibility of a remedy, including the availability of materials and services needed to implement a particular option.
- **Cost** includes estimated capital and Operation and Maintenance costs, also expressed as net present worth-costs.

Modifying Criteria

- **State Acceptance** reflects aspects of the preferred alternative and other alternatives that the state favors or objects to, and any specific comments regarding state ARARs or the proposed use of waivers.
- **Community Acceptance** summarizes the public's general response to the alternatives described in the Proposed Plan and in the RI/FS, based on public comments received.

Long-Term Effectiveness and Permanence

Alternatives 1 and 2 provide long-term effectiveness and permanence because the existing cover and composite earthen material and earthen/synthetic material cover options provide for reliable isolation of the Pad A. A degree of residual risk would remain, however, as the waste material would not be removed from Pad A.

The No Action alternative would likely provide a lower level of long-term effectiveness and permanence due to the lack of cover maintenance and the potential for future uncontrolled erosion and subsidence.

Reduction of Toxicity, Mobility, or Volume Through Treatment

The Pad A investigation and risk assessment indicated that the cover would reliably control Pad A wastes in place; therefore, no treatment alternatives were evaluated.

Short-Term Effectiveness

In general, alternatives requiring the least amount of worker interface (i.e., construction and/or operations) and Pad A waste handling rank the highest in terms of short-term effectiveness.

Alternatives 1 and 2 rank equally under this criterion since they do not require handling of the Pad A wastes. There is

no increase in the potential risk to the public because the Pad A waste will not be disturbed under either of these alternatives.

Implementability

Each of the alternatives retained for detailed analysis is readily implementable. However, Alternative 1 ranks slightly lower than Alternative 2 and the No Action alternative due to the increased difficulty of installing and maintaining the multi-layered cover systems.

Cost

Table 4 summarizes the cost estimates for each alternative. These cost estimates, in present dollar value, include *direct* and *indirect costs* as well as maintenance and monitoring costs.

State Acceptance

The Idaho Department of Health and Welfare has been involved in the preparation of this proposed plan. This proposed plan is issued with the concurrence of IDHW.

Direct Costs - the estimated dollars for equipment, construction and operation activities to conduct a remedial action.

Indirect Costs - the estimated dollars for activities that support the remedial action (e.g., construction management, project management, management reserve, etc.)

Table 3. Evaluation of Alternatives.

Evaluation Criteria	Remedial Action Alternatives	
	Alternative 1: Containment	Alternative 2: Limited Action
Long-Term Effectiveness	●	●
Reduction of Toxicity, Mobility, or Volume Through Treatment	N/A*	N/A*
Short-Term Effectiveness	◐	◐
Implementability	◐	●
Cost	◐	●

● = Best

◐ = Good

⊘ = Poor

○ = Worst

* No treatment alternatives were evaluated

Table 4. Pad A Alternative Cost Estimates Summary (in present dollar value).

Cost Elements	Alternatives		
	Alternative 1 Containment ^a	Alternative 2 Limited Action	Alternative 3 No Action
Construction	\$753,689	\$435,105	\$0
Post-Closure Maintenance & Monitoring ^b	707,133	707,133	691,760
Indirects	831,678	547,382	155,646
Total	\$2,292,500	\$1,689,620	\$847,406

a Representative costs for options considered under Alternative 1.

b Monitoring costs for all alternatives are approximately \$45,000 per year. The cost evaluation was done for 30 years for relative cost comparison; DOE Order 5820.2A requires active institutional control of low-level radioactive waste disposal sites for 100 years following closure.

Summary of Preferred Alternative

The preferred alternative for Pad A is Alternative 2: Limited Action. Alternative 2 will be designed to provide overall protection and to comply with ARARs, ensures risks are reduced, and provides adequate protection for both long- and short-term effectiveness, is easily implemented, and is cost effective.

In summary, Alternative 2 - Limited Action, would focus on contouring and slope correction, maintenance and monitoring of the existing cover at Pad A. The preferred alternative is believed to provide the best balance of trade-offs among the alternatives with respect to the evaluation criteria. The agencies believe the preferred alternative is protective of human health and the environment, complies with federal and state regulations, and is cost-effective.

Limited action was selected as the preferred alternative because the baseline risk assessment showed that there were no current or future unacceptable risks to human health for the industrial and residential scenarios considered. Maintenance and monitoring will ensure

the effectiveness of the existing cover.

Maintenance will include subsidence and erosion control of the cover. Monitoring will be conducted at Pad A to ensure the effectiveness of the existing cover. Air, surface water, and soil monitoring will be designed and conducted to provide early detection of a potential release to the groundwater or surface pathways.

Performance standards that would be implemented for Alternative 2 include (1) maintaining the soil cover to prevent excessive infiltration thereby providing continued protection of groundwater, and (2) ensuring erosion is monitored and controlled to limit soil loss such that the infiltration rates are not effected, and the potential for exposing wastes is eliminated.

Because this remedy will result in wastes remaining onsite, independent reviews of the monitoring data will be conducted by EPA and IDHW. This evaluation will be conducted within two years of ROD signature, and at least every five years thereafter, to ensure that the remedy continues to provide adequate protection of human health and the environment.

— Comment Form —

Name: _____

Address: _____ **City:** _____ **State:** _____ **Zip:** _____

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(comments continued)

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Public Involvement Opportunities

Public input is critical to the CERCLA process, and the agencies encourage you to participate in the remedy selection process. The Remedial Investigation/Feasibility Study Report and other information that supports the Limited Action recommendation are available for your review in the Administrative Record. Copies are also available at the INEL Information Repositories listed on this page. The following public involvement activities or opportunities are available:

Open Houses/Public Meetings - During the 30-day comment period (July 28 through August 26), two open houses and three public meetings are scheduled as listed on the front page. Verbal and written comments will be accepted on the Proposed Plan at all of these meetings.

Written Comments - Written comments are encouraged and should be addressed to Jerry Lyle at the DOE Idaho Operations Office at the address listed on this page.

Questions - If you have questions concerning the Proposed Plan or other INEL issues, please call the INEL Community Relations Plan Office at (208) 526-6864.

INEL Information Repositories - Additional information is available at the Information Repositories (which contain the Administrative Record) listed on this page.

The agencies need your comments on this Proposed Plan and the alternatives presented. All comments, verbal and written, will be addressed in the Responsiveness

Summary portion of the Record of Decision scheduled for early 1994.

Addresses

For submission of written comments:

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Idaho Falls, ID 83403-2047
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For additional information:

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(206) 553-7261

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Idaho Department of Health and
Welfare
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P.O. Box 2047
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(208) 526-6864
(800) 708-2680

INEL Information Repositories

INEL Technical Library
DOE-ID Public Reading Room
1776 Science Center Drive
Idaho Falls, ID 83415
(208) 526-1185

Idaho Falls Public Library
457 Broadway
Idaho Falls, ID 83402
(208) 526-1450

Twin Falls Public Library

434 2nd Street East
Twin Falls, ID 83301
(208) 733-2964

Pocatello Public Library

812 East Clark Street
Pocatello, ID 83201
(208) 232-1263

Boise Public Library

715 South Capital Blvd.
Boise, ID 83706
(208) 384-4076

Idaho State Library

325 W. State
Boise, ID 83702
(208) 334-2152

University of Idaho Library

University of Idaho Campus
Moscow, ID 83843
(208) 885-6344

Shoshone Bannock Library

HRDC Building
Bannock and Pima Streets
Fort Hall, ID 83203
(208) 238-3882

INEL Outreach Offices

INEL Pocatello Office

1651 Al Ricken Dr.
Pocatello, ID 83201
(208) 233-4731

INEL Twin Falls Office

233 2nd Street North, Suite B
Twin Falls, ID 83301
(208) 734-0463

INEL Boise Office

816 West Bannock, Suite 306
Boise, ID 83702
(208) 334-9572

Environmental Restoration Information Office

Moscow, ID
(208) 882-6668
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